



## Abstract

A light source device includes: a light-emitting tube including a light-emitting portion that generates a light beam by an electric discharge between electrodes and sealing portions provided on both sides of the light-emitting portion; a reflector including a neck portion provided with an insertion hole to which the light-emitting tube is inserted, and a reflecting portion integrally formed with the neck portion and having an ellipsoidal curved reflecting surface that irradiates forward the light beam emitted by the light-emitting portion and aligns the light beam ~~after-aligning~~ in a predetermined direction. The light-emitting tube has a sub-reflection mirror that covers substantially front half of the light-emitting tube. The insertion hole has a diameter that is enlarged from the base end thereof toward the distal end in a light irradiation direction. The opening diameter of the insertion hole on the side of the reflecting surface is greater than the external diameter of the sub-reflection mirror while the opening internal diameter is within the diameter of a valid reflection area of the reflector, the diameter being defined by a front focal position of the reflector and the outer periphery of the sub-reflection mirror.

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